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STUDY OF THROMBOCYTOPENIA IN PREGNANCY

Gynecology

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ABSTRACT

INTRODUCTION: Thrombocytopenia defined as platelet count of less than 1,50,000/cu.mm. is a common haematological disorder. It is second only to anaemia as the most common haematological abnormality in pregnancy. The majority of thrombocytopenic pregnant women is healthy, has no history of thrombocytopenia, and is incidentally diagnosed by blood testing. This condition, called incidental or gestational thrombocytopenia (GT), usually has no influence on pregnancy, labour & delivery or on the new born. Thrombocytopenia in pregnancy is divided according to aetiology into gestational, medical (ITP, hypersplenism, hepatic disorders etc.) and obstetric (hypertensive disorders, DIC) thrombocytopenia.

AIMS AND OBJECTIVES: To determine the aetiology, adverse effects and interventions required in relation to thrombocytopenia in pregnancy.

MATERIALS AND METHODS: Records of obstetric patients were studied from Department of Obstetrics and Gynaecology B.J. Medical College Ahmedabad, from April 2017 to March 2018. Patients were included irrespective of gestational age. All women had previous records of platelet count estimation.

CONCLUSION: Thrombocytopenia is a common problem during pregnancy, often under diagnosed and mismanaged. Gestational Thrombocytopenia was the most common cause around 64% of all thrombocytopenia in this study with a platelet count ranging from 65,000 to 1,35,000/cu.mm. It followed a benign course without any adverse effect and need for intervention during pregnancy. The platelet count falls progressively during pregnancy and rarely drops below 70,000/Cu.mm. Women are asymptomatic and have a completely negative history of abnormal bleeding. Thrombocytopenia due to HELLP syndrome and severe preeclampsia were the 2nd common cause around 22% of all thrombocytopenia in our study. ACOG recommended that the definitive treatment of maternal thrombocytopenia in the setting of PIH with HELLP syndrome is termination of pregnancy. Platelet transfusions are less effective in these women because of accelerated platelet destruction. ITP(immune thrombocytopenic purpura) affects only 1–2 of every 10,000 pregnancies. The diagnosis of ITP is based on exclusion and only be made if other causes have been excluded. Women with ITP and platelet counts over 50,000/cu.mm must be managed conservatively during labour and delivery and a caesarean section is performed only for obstetrical indications.

The baseline low platelet counts and declining trend with increasing gestational age predispose Indian women to increased risk of thrombocytopenia in pregnancy. Thus, platelet count estimation should be a routine at first antenatal visit for timely diagnosis and to achieve favourable feto-maternal outcome in all types of thrombocytopenia during pregnancy.

KEYWORDS

Pregnancy, Antenatal care, Gestational thrombocytopenia, HELLP syndrome, ITP

INTRODUCTION

- Thrombocytopenia defined as platelet count of less than 1,50,000/cu.mm. is a common haematological disorder. It is second only to anaemia as the most common haematological abnormality in pregnancy. Thrombocytopenia is being more frequently diagnosed in pregnant women since the last 20 years. Thrombocytopenia in pregnant women may result from the effects of diverse processes, which may be either physiological or pathological. Thrombocytopenia is divided according to severity into mild (100,000 to 150,000), moderate (50,000 to 100,000) and severe (less than 50,000) thrombocytopenia.
- The majority of thrombocytopenic pregnant women is healthy, has no history of thrombocytopenia, and is incidentally diagnosed by blood testing. This condition, called incidental or gestational thrombocytopenia (GT), usually has no influence on pregnancy, labour & delivery or on the new born.
- There may not be a risk of severe haemorrhage in GT, but pre-eclampsia, HELLP syndrome and ITP (Immune Thrombocytopenic Purpura) expose mother and child to potentially life threatening complications.
- Thrombocytopenia in pregnancy is divided according to etiology into gestational, medical (ITP, hypersplenism, hepatic disorders etc.) and obstetric (hypertensive disorders, DIC) thrombocytopenia.

AIMS AND OBJECTIVES

- To determine the etiology, adverse effects and interventions required in relation to thrombocytopenia in pregnancy.

MATERIAL AND METHODS

- Study type: Retrospective Study
- No. of patients: 80 obstetric patients
- Place: B. J. Medical College and Civil Hospital, Ahmedabad, Gujarat, India.
- Exclusion criteria: Patients with pancytopenia and bone marrow suppression were excluded from the study.
- Records of obstetric patients were studied from Department of Obstetrics and Gynaecology B.J. Medical College Ahmedabad, from June 2017 to May 2018. Patients were included irrespective of gestational age. All women had previous records of platelet count estimation. Platelet count assessment had been done through automated blood count analyser with routine antenatal haematological evaluation of the patient.
- Platelet counts are repeated once in each trimester and in the postpartum period. Babies of all cases had been tested for thrombocytopenia and were followed up for any complications. All women had been subjected to blood test for Hb, TLC, DLC, Bleeding time, Clotting time, RFT, LFT, HBsAg & HIV. Women with fever had been tested for Dengue IgM. Coagulation tests (PT, APTT, FDP and fibrinogen) had been done in those with signs or symptoms of DIC.

DISCUSSION

Thrombocytopenia is a common problem during pregnancy, often under diagnosed and mismanaged. Limited data was available from early pregnancy as a significant proportion of antenatal women in our scenario seek advice only during late pregnancy or when a complication arises.

In the present study, prevalence of thrombocytopenia during pregnancy was 8.8% . The prevalence of thrombocytopenia in Indian population is similar to world literature (5–12%). The present study found no influence of age and religion on prevalence of thrombocytopenia in pregnancy.

Gestational Thrombocytopenia was the most common cause around 64% of all thrombocytopenia in this study with a platelet count ranging from 65,000 to 1,35,000/cu.mm. The pathophysiological process is not known but is thought to represent an acceleration of platelet consumption via an exaggeration of the physiological process across the placenta, or possibly via a mild immune process. It followed a benign course without any adverse effect and need for intervention

during pregnancy. The platelet count falls progressively during pregnancy and rarely drops below 70,000/Cu.mm. Women are asymptomatic and have a completely negative history of abnormal bleeding. Gestational Thrombocytopenia has no impact on either the mother or the fetus.

Thrombocytopenia due to HELLP syndrome and severe preeclampsia were the 2nd common cause around 22% of all thrombocytopenia in our study. Activation of both the coagulation and fibrinolytic systems leads to the development of severe thrombocytopenia and disseminated intravascular coagulation (DIC) which occurs in some patients with preeclampsia. We observed that HELLP syndrome caused haemolysis, altered liver functions, lowering of platelets and severe hypertension in our patients and was associated with high maternal and fetal morbidity and mortality due to placental abruption, preterm deliveries, low APGAR scores, intrauterine growth retardation, stillbirths and maternal deaths.

In our study 3 mortality was recorded in relation to thrombocytopenia, in which 2 due to HELLP SYNDOME and its complication, which was 66.66%, other one due to PPH, which was 33.33% of total mortality. ACOG recommended that the definitive treatment of maternal thrombocytopenia in the setting of PIH with HELLP syndrome is termination of pregnancy. Platelet transfusions are less effective in these women because of accelerated platelet destruction.

ITP (immune thrombocytopenic purpura) affects only 1–2 of every 10,000 pregnancies. Detection of thrombocytopenia prior to 28 weeks of gestation is predictive of ITP. We found 1 case of ITP in our study, which was 1.2% of total thrombocytopenia cases, which was detected in 2nd trimester. The diagnosis of ITP is based on exclusion and only be made if other causes have been excluded.

When ITP appears during pregnancy, both mother and fetus can be affected as antiplatelet antibody IgG can cross the placenta and cause thrombocytopenia. It is difficult to predict which fetus will be affected. The best predictor of severe neonatal thrombocytopenia is a previously affected child. Corticosteroids is the first line therapy, law doses of steroid is safe and effective in pregnancy. Intravenous immunoglobulin may be used in women requiring prolong therapy or resistant to steroid therapy or require high maintenance dose. Platelet transfusion are given as last resort for bleeding or prior to surgery.

Women with ITP and platelet counts over 50,000/cu.mm must be managed conservatively during labour and delivery and a caesarean section is performed only for obstetrical indications. Corticosteroids is the first line therapy, law doses of steroid is safe and effective in pregnancy. Intravenous immunoglobulin may be used in women requiring prolong therapy or resistant to steroid therapy or require high maintenance dose. Platelet transfusion are given as last resort for bleeding or prior to surgery.

Women with ITP and platelet counts over 50,000/cu.mm must be managed conservatively during labour and delivery and a caesarean section is performed only for obstetrical indications.

Table 1: Distribution of Thrombocytopenia cases according to Etiology

Cause	No. Of Cases	%
Gestational Thrombocytopenia	**53**	64%
Obstetrics causes	**17**	22%
1. S.PIH, Pre-eclampsia	11	13%
2. Eclampsia	4	6%
3. DIC	2	3%
Medical	**10**	15.66%
1. Hypersplenism	1	2.4 %
2. Hepatic disorder	2	3.6 %
3. Malaria	4	6.02%
4. Megaloblastic Anaemia	2	2.4%
5. ITP	1	1.2%

Table 2: MATERNAL OUTCOME

	Number of cases	%
Survived	77	96.4%
Died	3	3.6%
Cause of maternal mortality		
Post-Partum haemorrhage	1	33.33 %
HELLP Syndrome and Its Complication	2	66.66 %

Table 3: Comparison of Patients required platelet transfusions

Platelets	Number of cases	%	No of Pts. Required platelet transfusion
<50,000 (Severe thrombocytopenia)	14	17.5%	14
50,000-1,00,000(Moderate thrombocytopenia)	43	53.7%	31
>1,00,000(mild thrombocytopenia)	23	28.7%	8

CONCLUSION

The baseline low platelet counts and declining trend with increasing gestational age predispose Indian women to increased risk of thrombocytopenia in pregnancy. Thus, platelet count estimation should be a routine at first antenatal visit for timely diagnosis and to achieve favourable feto-maternal outcome in all types of thrombocytopenia during pregnancy.

Gestational Thrombocytopenia is the most common cause of thrombocytopenia during pregnancy. If no antecedent history of thrombocytopenia is present and platelet counts are above 70,000/cumm, the condition is more likely to be GT. Follow platelet counts every 1-2 months or more frequently if the patient is symptomatic. Cesarean deliveries should be reserved for obstetrical indications only.

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